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GROUP 110 *PL*

Applicant: Hardaway et al

Application: Tumble Method of Rinsing Fabric in a  
Horizontal Axis Washer

Serial No.: 07/815,782

Filing Date: 01/02/92

Atty. Docket No.: PA-5839-O-AW-USA

Art Unit: 1109

2000 M-63  
Benton Harbor, Michigan 49022

Honorable Commission of  
Patents and Trademarks  
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT  
TRANSMITTAL LETTER

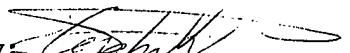
Sir:

Transmitted herewith is an Information Disclosure Statement  
in the above-identified application.

Respectfully,

WHIRLPOOL CORPORATION

By:

  
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Enclosures

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with  
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*April 2, 1992*

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## INFORMATION DISCLOSURE STATEMENT



APPLICANT: Hardaway et al  
 SERIAL NO: 07/815,782 GROUP ART UNIT: 1109  
 FILED: 01/02/92 EXAMINER:  
 INVENTION: Tumble Method of Rinsing Fabric in a Horizontal Axis Washer

Hon. Commissioner of Patents and Trademarks  
 Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. 1.56, Applicants request that citation and examination of the following patents be made during the course of examination of the above-referenced application for United States Patent:

<u>PATENT NO.</u>	<u>PATENTEE</u>	<u>ISSUE DATE</u>
<b>UNITED STATES PATENTS</b>		
AA 2,966,052	Syles	27 Dec. 1960
AB 3,197,980	Marple	03 Aug. 1965
AC 3,650,673	Ehner	21 Mar. 1972
AD 3,811,300	Barton et al	21 May 1974
AE 4,118,189	Reinwald et al	03 Oct. 1978
AF 4,432,111	Hoffmann et al	21 Feb. 1984
AG 4,489,455	Spendel	25 Dec. 1984
AH 4,489,574	Spendel	25 Dec. 1984
AI 4,696,171	Babuin	29 Sep. 1987
AJ 4,987,627	Cur et al	29 Jan. 1991
<b>FOREIGN PATENTS</b>		
AK A.U. Patent 209,436	Johnson	25 Jul. 1957

**EXPLANATION OF RELEVANCE**

Reference AA discloses an invention which relates to the art of cleaning textiles and similar materials, within a horizontal axis washing and drying machine having a rotatable drum. The machine utilizes a recirculating pump to continuously recirculate a conditioning stream of liquid onto the clothes within the wash zone. The machine utilizes fresh water inlet and the tumbling action of the clothes within the rotating drum for rinse means. Liquid is removed from the clothes by a centrifuging action. The machine also incorporates a blower device in conjunction with tumbling action to provide a final drying means.

Reference AB discloses a laundry apparatus for automatically laundering a batch of materials utilizing a superwash cycle within a horizontal axis washing machine. Control means are provided such that during the initial wash cycle of the machine the clothes and water are tumbled within a rotating drum to fully wet materials, and to loosen surface dirt. At the end of the initial wash cycle, approximately half of the water within the rotating drum is drained out, and replaced with a concentrated washing solution, supplied by an additive dispenser. Means are provided for tumbling the clothes within the concentrated wash solution for a limited time. Upon completion of said limited time, liquid level control means are actuated to add fresh water to said concentrated solution and thereafter operate said apparatus to complete a normal laundry sequence.

Reference AC discloses a dry wash fabric cleaning method and apparatus designed to clean with a limited amount of water. The machine utilizes a solution consisting of water, detergent and a transfer agent such as foam rubber cubes or cloth swatches. The

amount of water used is dependant on the size of the clothes load, with damping of the clothes being desired. The device tumbles the clothing and the solution, causing the soil from the fabric to be redistributed over the combined exposed surface areas of the fabrics and transfer agent. The soiled transfer agent is then separated from the fabrics, whereby the fabrics are cleaned of the soil distributed onto the transfer agent.

Reference AD discloses a washing machine having a rotatable, horizontal drum. Means are provided for rotating the drum for tumbling clothes places in the drum during wash and spinning clothes during rinse and spin-dry cycles. Spray means are provided for continuously spraying fresh or clear liquid rinsing medium radially outward through the basket in opposite directions.

Reference AE discloses a method for washing textiles within a concentrated solution, while saving water during the wash and rinse cycles. The machine utilizes a foamed detergent solution having a high concentration of detergent, in conjunction with a means of agitation. The textiles are exposed to the foamed detergent solution for a minimum of 30 seconds, then the solution is expelled from the tub by spinning, the process is repeated a minimum of five times. The textiles are then exposed to a normal rinse, which then renders the textiles clean.

Reference AF discloses a laundering apparatus having a horizontal axis, rotatable, perforate drum. The drum is rotated at a centrifugal velocity of .4-.95 g so that clothes within the drum are lifted up and fall in a trajectory onto the lower portion of the drum. A quantity of wash liquor equal to 45%-100% of the maximum amount which the clothes can absorb is added. Wash liquor is removed by high speed centrifuging. Reference is made to a spray means for applying the wash liquor.

Reference AG discloses an apparatus and process for laundering textiles within a horizontal axis design. The machine is designed such that during the rotation of the drum a highly concentrated detergent wash solution is applied directly to the clothes by a spray nozzle, to insure uniform distribution. Recirculation of the liquid solution is carried out until such time that the detergent composition is dissolved or dispersed in the water. The rotation of the drum also supplies mechanical agitation which produces heat transfer within the clothes. Means are provided such that upon completion of the wash cycle, the clothes are rinsed with an amount of water sufficient to adequately suspend the soil and composition applied by the spray nozzle. At the completion of the rinse cycles the load is centrifuged at a high rate of speed.

Reference AH discloses a method for highly efficient laundering of textiles within a horizontal axis washer. The method requires that a concentrated aqueous solution be applied directly to clothes that are preferably initially dry. The concentrated aqueous solution comprises from about 40% to about 99.9% water and from about 1,000 ppm to about 600,000 ppm of detergent composition. A quantity of concentrated solution ranging from just enough to be completely distributed on the clothes to about five times the dry weight of the clothes is administered to the clothing in an evenly distributed fashion, to eliminate any possibility of clean spots. After the wash cycle, the clothes are rinsed in a clear water bath, for removal of the detergent composition and soil.

Reference AI discloses a horizontal axis washing machine capable of efficiently washing laundry having a rotatable perforate drum. The temperature of wash water within the drum is controlled by a heater element within the drain housing. The wash water is repeatedly recirculated toward the tub, with the object of spraying the same onto the load to be washed. The machine is equipped with a series of pressure switches which allow water level control for conventional water use or optimum conservation of water, detergent and energy.

Reference AJ discloses an invention which relates to a method for high performance clothes washing, within a vertical axis washing machine. The method is such that a concentrated detergent solution is continuously applied to a spinning washing load for a predetermined time period. The application of the concentrated wash is incrementally applied until a sufficient amount of the wash liquid is detected as having been introduced into the wash zone. The washing liquid is recirculated and reapplied to the clothes load for a predetermined period of time. The process is finalized with additional water being added to the containing tub, to dilute the washing solution to a normal concentration, use in conjunction with mechanical agitation and rinsing cycles.

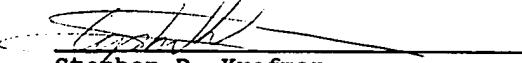
Reference AK discloses a horizontal axis washing machine have a perforate, rotatable drum. Means for tumbling clothes within a highly concentrated detergent solution within the drum are provided. Time control means are provided for admitting additional water to the drum for reducing the concentration of detergent solution after a predetermined period of time. Conventional rinsing and centrifuging means are provided.

References AA, AD, AE, AF, and AI are considered by the Applicant as being the most relevant in connection with the examination of the above-entitled patent application.

Applicant respectfully submits that none of the references teach or suggest, singly, or, where permissible, in combination, the invention claimed in the present application and therefore Applicant looks forward to receiving early and favorable consideration of the claims.

A copy of each reference is attached for the Examiner's convenience and review.

Respectfully submitted,

  
Stephen D. Krefman  
Registration No. 28,631

SDK:edw